

## LDP-C 40-05

### Driver for High Power Laser Diodes

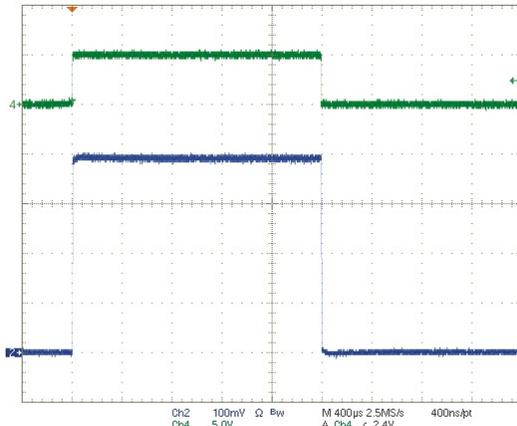


Figure: Current monitor output, scale: 10A/Div

- Output current: 1 .. 40 A
- Output current between pulses: 0 A
- Compliance Voltage: 1 .. 5 V
- Coverage of both CW and QCW range
- Analog modulation up to 16 kHz
- Half-Brick size OEM-Module
- Several protective features
- Adjustable current rise time
- High efficiency

#### Technical Data:\*

|   |   |
|---|---|
| Output current                          | 1 .. 40 A                                       |
| Max. compliance voltage                 | 5 V   |
| Typ. pulse rise time (10 A)             | 400 ns .. 1 $\mu$ s (adjustable)                |
| Typ. pulse trigger delay                | 200 ns **                                       |
| Min. pulse width                        | < 1 $\mu$ s                                     |
| Max. pulse width                        | CW  |
| Max. repetition rate                    | 500 kHz   |
| Current ripple                          | < 400 mA, > 200 kHz                             |
| Current overshoot                       | < 1 %   |
| Analog modulation (10 A <sub>pp</sub> ) | < 16 kHz  |
| Current settling time (full-scale)      | < 60 $\mu$ s                                    |
| Pulse trigger input                     | 5 V TTL into 500 $\Omega$                       |
| Current setting input                   | 0 .. 1.6 V external (25 A/V)                    |
| Current monitor                         | 25 A/V  |
| Voltage monitor                         | 0.1 V/V   |
| Supply voltage                          | 4 .. 6 V DC (at least 1 V above compl. voltage) |
| Max. power dissipation                  | 30 W  |
| Dimensions in mm                        | 60.9 x 57.8 x 54<br>Half-Brick size             |
| Weight                                  | 194 g   |
| Operating temperature                   | 0 to + 55 ° C                                   |

\* Specifications measured with a fast recovery diode instead of a laser diode. Technical data is subject to change without further notice.  
\*\* Max 2  $\mu$ s at longest rise time

#### Product Description:

The LDP-C 40-05 OEM is a very affordable, compact and efficient current supply to drive laser diodes.

The pulsing capability ranges from single pulses over several hundred kilohertz repetition frequency up to continuous operation. Besides pulsing the diode, analog modulation of the output current is also possible. Its intended field of application is laser soldering and welding as well as generic surface treatment.

The innovative current regulation concept of the LDP-C 40-05 produces, compared to the commonly used linear regulation concept, considerably less losses. Hence only one supply voltage is needed for the control logic and the power stage. The current consumption drawn from the power supply only needs to cover the average laser power and is typically much less than 40 A.

Designed to shield your laser diode from damage, the LDP-C 40-05 features a number of powerful protective safeguards:

- Innovative current regulation concept actively prevents laser diode from overshoots and over-current
- Integrated Soft Start
- Protection against transients through regulated current rise time
- Over-temperature shutdown
- Enable/Disable input
- Pulser status output
- Shunt MOSFETs short the output clamps in case of an error
- Protection of the laser diode against reverse currents

#### Optional Accessories: LDP-C-BOB